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EXAMINER

TAI, XIUYU

ART UNIT

PAPER NUMBER

1795

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,173	Applicant(s) BOSCHERT ET AL.	
	Examiner Xiuyu Tai	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,6,10-22,25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,6,10-22,25 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Due to applicant's amendment, objection to the specification is withdrawn
2. Due to applicant's amendment, rejections to claims 14 and 21- 24 under 35U.S.C. 112 second paragraphs are withdrawn.
3. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection necessitated by applicant's amendment.

Claim Objections

4. Claim 6 is objected to because of the following informalities: claim 6 depends on claim 4 which is canceled; as a result, claim 6 will not be examined on the merits. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 3, 5, 10-16, 20-22, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (U.S. 6,382,305) in view of Reisfeld et al (U.S. 6,716,406) and in further view of Cornwell (U.S. 5,221,520).

9. Regarding claim 1, Sano discloses a heating ventilation, and air conditioning unit for automotive vehicle. The unit comprises; (1) an inside air inlet 16 and an outside air inlet 17 (Figure 1; col. 4, line 23-28); (2) air outlets (Ov, Od, and Of; Figure 2; col. 8, line 49-51); and (3) an air mix door 33 (Figure 2; col. 7, line 15-18). Sano further teaches that the air mix door 33 can be positioned in full-cool mode or full-hot mode (col. 8, line 28-40), which serves as a baffle device operating under different modes.

Sano fails to teach an oxidation device comprising a first ozone generator and a second ozone generator. However, Reisfeld et al disclose a control system for a photocatalytic air purifier. The system comprises an air purifier unit 10 having a plurality of UV lamps 20/ 22 (i.e. ozone generator; Figure 1; col. 3, line 18) disposed between filter elements 14/16/18 including catalytic coating 120 thereon (Figure 1; col. 3, line 20-

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27) to oxidize VOCs and destroy bioaerosols, hence purifying air (col. 3, line 1-4).

Therefore, it would be obvious for one having ordinary skill in the art to include the air purifier unit of Reisfeld in the device of Sano in order to purify conditioned air in the vehicle compartment.

Sano/Reisfeld fails to teach ozone destruction catalyzer disposed between two ozone generators. However, Cornwell discloses an apparatus for treating indoor air. The apparatus comprises an ozone generator 20 (Figure 1; col. 8, line 1) and a filter 26 containing a catalyst destructive to ozone (Figure 1; col. 9, line 6-7). The filter 26 is disposed downstream of the ozone generator 20. Therefore, it would be obvious for one having ordinary skill in the art to dispose the catalyst of Cornwell between the two ozone generators of Sano/Reisfeld in order to destroy residual ozone before being discharge to the vehicle compartment.

The combined teaching of Sano/Reisfeld/Cornwell is fully capable of performing the claimed functions since all the structural limitations of the apparatus of Sano/Reisfeld/Cornwell are substantially identical to the instant claim.

10. Regarding claim 3, the combined teaching of Sano/Reisfeld/Cornwell is fully capable of performing the claimed functions since all the structural limitations of the apparatus of Sano/Reisfeld/Cornwell are substantially identical to the instant claim.

11. Regarding claim 5, Cornwell indicates that the catalyst in the filter 26 is surface modified zeolite in the form of a sorption catalyst (col. 8, line 32-36), reads on the instant claim.

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Regarding claim 11, Sano discloses a heating ventilation, and air conditioning unit for automotive vehicle. The unit comprises; (1) an inside air inlet 16 and an outside air inlet 17 (Figure 1; col. 4, line 23-28); and (2) air outlets (Ov, Od, and Of; Figure 2; col. 8, line 49-51). Sano fails to teach an oxidation device comprising a first ozone generator and a second ozone generator. However, Reisfeld et al disclose a control system for a photocatalytic air purifier. The system comprises an air purifier unit 10 having a plurality of UV lamps 20/ 22 (i.e. ozone generator; Figure 1; col. 3, line 18) disposed between filter elements 14/16/18 including catalytic coating 120 thereon (Figure 1; col. 3, line 20-27) to oxidize VOCs and destroy bioaerosols, hence purifying air (col. 3, line 1-4). Therefore, it would be obvious for one having ordinary skill in the art to include the air purifier unit of Reisfeld in the device of Sano in order to purify conditioned air in the vehicle compartment. Moreover, Sano further teaches that an air mix door 33 can be positioned in full-cool mode or full-hot mode (col. 8, line 28-40). Sano/Reisfeld fails to teach ozone destruction catalyzer disposed between two ozone generators. However, Cornwell discloses an apparatus for treating indoor air. The apparatus comprises an ozone generator 20 (Figure 1; col. 8, line 1) and a filter 26 containing a catalyst destructive to ozone (Figure 1; col. 9, line 6-7). The filter 26 is disposed downstream of the ozone generator 20. Therefore, it would be obvious for one having ordinary skill in the art to dispose the catalyst of Cornwell between the two ozone generators of Sano/Reisfeld in order to destroy residual ozone before being discharge to the vehicle compartment. It should be noted that the air mix door 31 of Sano Reisfeld/Cornwell can move from open position to shut position which permits air flow

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by-pass air passage 32 to switch between an active position achieve (i.e. purification mode) and a passive position (i.e. sterilization mode).

The combined teaching of Sano/Reisfeld/Cornwell is fully capable of performing the claimed functions since all the structural limitations of the apparatus of Sano/Reisfeld/Cornwell are substantially identical to the instant claim.

12. Regarding claim 10, the air mix door 31 of Sano can move from open position to shut position which permits air flow by-pass air passage 32 (col.8, line 28-40).

Therefore, the air mix door of Sano/Reisfeld/Cornwell is fully capable of performing the claimed function.

13. Regarding claim 12, the air mix door 33 of Sano (Figure 2; col. 7, line 15-18) can be switched from an open position to a close position (col. 8, line 28-40). It is inherent to have a switching element. The air mix door 33 is disposed upstream of air outlets Ov, Od, and Of, reads on the instant claim.

14. Regarding claim 13, the air mix door 31 of Sano can move from open position to shut position which permits air flow by-pass air passage 32, reads on the instant claim.

15. Regarding claim 14, the combined teaching of Sano/Reisfeld/Cornwell is fully capable of performing the claimed functions since all the structural limitations of the apparatus of Sano/Reisfeld/Cornwell are substantially identical to the instant claim.

16. Regarding claim 15, the air purifier unit 10 of Reisfeld comprises a plurality of UV lamps 20/ 22 (i.e. ozone generator; Figure 1; col. 3, line 18) disposed between filter elements 14/16/18 including catalytic coating 120 thereon (Figure 1; col. 3, line 20-27), reads on the instant claim.

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17. Regarding claim 16, the catalytic coating of Reisfeld may be TiO₂ (col. 3, line 47-52) which is an oxidation catalyst, reads on the instant claim.

18. Regarding claim 20, the catalyst containing zeolite coating on the filter 26 of Cornwell (col. 8, line 32-36) is disposed upstream of duct passage 18 (Figure 1; col. 7, line 67-68). Therefore, it would be obvious for one having ordinary skill in the art to arrange the catalyzer upstream of a distribution chamber in Nagata system in order to destroy excessive ozone produced and to discharge safe amount of ozone to the environment.

19. Regarding claims 21, 22, and 25, the UV lamps 20/ 22 of Reifeld (i.e. ozone generator; Figure 1; col. 3, line 18) are disposed between filter elements 14/16/18 including catalytic coating 120 thereon (Figure 1; col. 3, line 20-27) to oxidize VOCs and destroy bioaerosols, hence purifying air (col. 3, line 1-4), reads on the instant claims.

20. Regarding claim 26, the filter 26 of Cornwell is disposed downstream of the ozone generator 20. Therefore, it would be obvious for one having ordinary skill in the art to dispose the catalyst of Cornwell between the two ozone generators of Sano/Reisfeld in order to destroy residual ozone before being discharge to the vehicle compartment.

21. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (U.S. 6,382,305) and Reisfeld et al (U.S. 6,716,406) and Cornwell (U.S. 5,221,520) as applied to claim1 above, and further in view of Hoke et al (U.S.6,214,303).

22. Regarding claim 17, Sano/Reisfeld/Cornwell fail to teach the catalyst is integrated into an existing component. However, Hoke et al disclose an apparatus to

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lower the concentration of pollutants in ambient air. Hoke further teaches that the stationary substrate surface, such as heat exchange surfaces, fan blades, and duct surfaces (col. 3, line 40-42) can be modified by coating to contain the pollutant treatment material (col. 3, line 29-31). Hoke also indicates that pollutant treating compositions include catalyst which can assist in the conversion of the pollutants to harmless compounds (col. 4, linen 65-66). Therefore, it would be obvious for one having ordinary skill in the art to coat the catalyst on the surface of heat exchangers, fan blades, and the interior of Nagata/Cornwell as suggested by Hoke in order to save space in a vehicle and to enhance purification efficiency.

23. Regarding claims 18 and 19, Sano/Reisfeld/Cornwell fail to teach the catalyst is integrated into other components. However, Hoke et al disclose an apparatus to lower the concentration of pollutants in ambient air. Hoke further teaches that the stationary substrate surface, such as heat exchange surfaces, fan blades, and duct surfaces (col. 3, line 40-42) can be modified by coating to contain the pollutant treatment material (col. 3, line 29-31). Hoke also indicates that pollutant treating compositions include catalyst which can assist in the conversion of the pollutants to harmless compounds (col. 4, linen 65-66). Therefore, it would be obvious for one having ordinary skill in the art to coat the catalyst on the surface of heat exchangers, fan blades, and the interior of Nagata/Cornwell as suggested by Hoke in order to save space in a vehicle and to enhance purification efficiency.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuyu Tai whose telephone number is 571-270-1855. The examiner can normally be reached on Monday - Friday, 7:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/X. T./

Examiner, Art Unit 1795

10/7/2008

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795